

Application No. 10/066,251
Amendment Dated: October 4, 2005
Reply to Restriction/Election Requirement of September 20, 2005

Page 2 of 10

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) A network configuration entity configured or adapted to exclusively control a defined set of management functions throughout a secure network, said secure network comprising a plurality of switching devices, said set of management functions comprising the recognition, operation and succession of the network configuration entity.

2. (Original) The network configuration entity of claim 1 further comprising a memory for storing an NCE list, said NCE list comprising an indication of each device in the network that may operate as said network configuration entity.

3. (Original) The network configuration entity of claim 1 wherein said set of management functions further comprise one or more rules for interaction between and among devices in the network.

4. (Original) The network configuration entity of claim 1 wherein said set of management functions further comprises device connection controls that indicate port relationships in said secure network

5. (Original) The network configuration entity of claim 4 further comprising a memory for storing a DCC list, said DCC list associated with said one or more rules for interaction between and among devices and comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network.

6. (Original) The network configuration entity of claim 3 further comprising a memory for storing a DCC list, said DCC list associated with said one or more rules for interaction

Application No. 10/066,251

Page 3 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

between and among devices and comprising definitions that logically bind each port in said secure network to one or more other ports resident in said said network.

7. (Original) The invention of claim 6 wherein said ports are identified by a unique number.

8. (Original) The invention of claim 7 wherein said unique number is a world-wide-name.

9. (Original) The network configuration entity of claim 1 wherein said set of management functions further comprises management access controls that restrict management services to a defined set of endpoints.

10. (Original) The network configuration entity of claim 9 further comprising a memory for storing an MAC list, said MAC list comprising an indication of network endpoints from which management access is acceptable.

11. (Original) The invention of claim 9 wherein said network endpoints comprise IP addresses.

12. (Original) The invention of claim 11 wherein said IP addresses are associated with access from SNMP or Telnet or HTTP or API.

13. (Original) The invention of claim 9 wherein said network endpoints comprise uniquely identified device ports.

14. (Original) The invention of claim 9 wherein said network endpoints comprise uniquely identified devices resident in said secure network.

Application No. 10/066,251

Page 4 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

15. (Original) The network configuration entity of claim 1 wherein said set of management functions further comprises switch connection controls for designating devices to participate in the secure network.

16. (Original) The network configuration entity of claim 15 further comprising a memory for storing an SCC list, said SCC list associated with said switch connection controls and comprising a list of devices authorized to participate in said secure network.

17. (Original) A network configuration entity configured or adapted to exclusively control a defined set of management functions throughout a secure network, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) the recognition, operation and succession of the network configuration entity, (ii) switch connection controls for designating devices to participate in the secure network, (iii) device connection controls that indicate port relationships in said secure network, and (iv) management access controls that restrict management services to a defined set of endpoints, said network configuration entity comprising;

a processor; and

a memory for storing

an NCE list, said NCE list comprising an indication of each device in the network that may operate as said network configuration entity,

an SCC list, said SCC list comprising an indication of each device allowed to participate in said secure network,

a DCC list, said DCC list comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network, and,

a MAC list, said MAC list comprising an indication of network endpoints from which management access is acceptable.

18. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of

Application No. 10/066,251

Page 5 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

switching devices, said set of management functions comprising (i) the recognition, operation and succession of the network configuration entity, (ii) switch connection controls for designating devices to participate in the secure network, (iii) device connection controls that indicate port relationships in said secure network, and (iv) management access controls that restrict management services to a defined set of endpoints, said Fibre Channel switching device comprising;

- a processor; and

- a memory for storing

- an NCE list, said NCE list associated with said recognition, operation and succession of the network configuration entity and comprising an indication of each device in the network that may operate as said network configuration entity,

- an SCC list, said SCC list associated with said switch connection controls and comprising an indication of each device allowed to participate in said secure network,

- a DCC list, said DCC list associated with said device connection controls and comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network, and,

- a MAC list, said MAC list associated with said management access controls and comprising an indication of network endpoints from which management access is acceptable.

19. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) the recognition, operation and succession of the network configuration entity, and (ii) switch connection controls for designating devices to participate in the secure network, said Fibre Channel switching device comprising;

- a processor; and

- a memory for storing

Application No. 10/066,251

Page 6 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

an NCE list, said NCE list associated with said recognition, operation and succession of the network configuration entity and comprising an indication of each device in the network that may operate as said network configuration entity, and

an SCC list, said SCC list associated with said switch connection controls and comprising an indication of each device allowed to participate in said secure network.

20. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) the recognition, operation and succession of the network configuration entity, and (ii) device connection controls that indicate port relationships in said secure network, said Fibre Channel switching device comprising;

a processor; and

a memory for storing

an NCE list, said NCE list associated with said recognition, operation and succession of the network configuration entity and comprising an indication of each device in the network that may operate as said network configuration entity, and

a DCC list, said DCC list associated with said device connection controls and comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network.

21. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) the recognition, operation and succession of the network configuration entity, and (ii) management access controls that restrict management services to a defined set of endpoints, said Fibre Channel switching device comprising;

a processor; and

Application No. 10/066,251

Page 7 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

- a memory for storing

- an NCE list, said NCE list associated with said recognition, operation and succession of the network configuration entity and comprising an indication of each device in the network that may operate as said network configuration entity, and

- a MAC list, said MAC list associated with said management access controls and comprising an indication of network endpoints from which management access is acceptable.

22. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) switch connection controls for designating devices to participate in the secure network, and (ii) device connection controls that indicate port relationships in said secure network, said Fibre Channel switching device comprising;

- a processor; and

- a memory for storing

- an SCC list, said SCC list associated with said switch connection controls and comprising an indication of each device allowed to participate in said secure network, and

- a DCC list, said DCC list associated with said device connection controls and comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network.

23. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) switch connection controls for designating devices to participate in the secure network, and (ii) management access controls that restrict management services to a defined set of endpoints, said Fibre Channel switching device comprising;

- a processor; and

Application No. 10/066,251
Amendment Dated: October 4, 2005
Reply to Restriction/Election Requirement of September 20, 2005

Page 8 of 10

a memory for storing
an SCC list, said SCC list associated with said switch connection controls and comprising an indication of each device allowed to participate in said secure network, and
a MAC list, said MAC list associated with said management access controls and comprising an indication of network endpoints from which management access is acceptable.

24. (Original) A Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management functions is controlled throughout said secure network by a network configuration entity, said secure network comprising a plurality of switching devices, said set of management functions comprising (i) device connection controls that indicate port relationships in said secure network, and (ii) management access controls that restrict management services to a defined set of endpoints, said Fibre Channel switching device comprising;

a processor; and
a memory for storing
a DCC list, said DCC list associated with said device connection controls and comprising definitions that logically bind a port on the network configuration entity, to one or more other ports resident in the secure network, and,
a MAC list, said MAC list associated with said management access controls and comprising an indication of network endpoints from which management access is acceptable.

25. (Original) A network comprising a network configuration entity and one or more other entities, said network configuration entity having network-wide control over a defined set of management functions, said set of management functions comprising:

the recognition, operation and succession of the network configuration entity;
one or more rules for interaction between and among entities in the network;
one or more rules governing management level access to the network; and
one or more rules governing management level access to one or more entities.

Application No. 10/066,251

Page 9 of 10

Amendment Dated: October 4, 2005

Reply to Restriction/Election Requirement of September 20, 2005

26. (Original) The network of claim 25 wherein said function of recognition, operation and succession of the network configuration entity is associated with a list of network devices that are eligible to become equivalent to said network configuration entity.

27. (Original) The network of claim 25 wherein the network configuration entity has exclusive control over one or more of said management functions.

28. (Original) The network of claim 25 further comprising one or more back-up network configuration entities.

29. (Original) The network of claim 25 wherein each of said security and management functions corresponds with a data structure in a memory.

Claims 30-53 (Cancelled)

54. (Original) A method of securing a network having a Fibre Channel switching device configured or adapted to operate in a secure network wherein a defined set of management function is controlled throughout said secure network by a network configuration entity, said method comprising the steps of:

controlling the recognition, operation and succession of the network configuration entity by designating an NCE list comprising an indication of each device in the network that may operate as said network configuration entity;

designating a unique name for each devices that may participate in the secure network;

indicating port relationships in said secure network to specifically delineate a list of unique names for ports that any given port may communicate with; and

restricting management access to a pre-defined set of access methods.